

**Geophysical Survey Report
St. Lawrence Cemetery Site
Macomb County; Shelby Township
Utica, Michigan**

**Dates of Survey
December 10-11, 2014**



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Region 5
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US EPA RECORDS CENTER REGION 5



569246

Introduction

At the request of Elizabeth Nightingale, USEPA On-Scene Coordinator – Region 5, a geophysical survey was conducted on December 10-11, 2014 at 5961 Auburn Road Utica, MI. The survey area is at the rear portion of the St. Lawrence Cemetery property (see Figure 1). The purpose of the survey was to locate possible buried debris, other significant subsurface metallic objects, or changes in subsurface conductivities, if any.

Present during the survey, besides Jim Ursic, were Mike Browning (a contractor to USEPA), and intermittent visits by OSC Nightingale. On occasion, a cemetery custodian and several visitors to the cemetery were present in areas away from the survey area, generally at grave sites.

Two geophysical instruments were used at this site and included a Geometrics G858-G cesium vapor gradient magnetometer and a Geophex GEM-2 broadband frequency domain electromagnetic (EM) tool.

Site Conditions

Weather conditions during the survey ranged from lower 20s° to 39° Fahrenheit, no precipitation occurred during this time (see Appendix A).

The survey extents included the area from the cemetery's northwestern most paved access road to the Clinton River within the Northwestern and Southeastern boundaries of the property (see Figure 1). In addition, the magnetometer survey was to include the Section of the Clinton River at the rear of the property. The purpose was to determine if ferrous metal was in the River, however, the 40 pound thrust electric motor did not provide enough thrust for the Jon boat to navigate the swift upstream current from the portage located at the Southwest intersection of Auburn Road at Clinton River in downtown Utica, MI (see Photos 1 & 2).

There were six distinct topographic areas within the survey boundaries, as illustrated in Figure 1, and described as:

- A. Flat grassy area
- B. Reeds taller than 6'
- C. Mounded areas, vegetated and non-vegetated
- D. Brush and tall weeds
- E. Small pond with reeds taller than 6'
- F. Marsh area
- G. Dense vegetated areas with slopes, ridges and floodplain

Maneuvering the hand carried geophysical equipment in areas B through G was difficult, more so for the magnetometer than for the EM tool. The magnetometer setup required long vertical and horizontal rods to support GPS sensor, magnetometer sensors and counter weight which was very vulnerable for entanglement in brush, vines and tree branches which could cause the

operator to lose their balance (see Photos 3 & 4). For safety reasons such areas were avoided. The EM instrument set up was less cumbersome and could access more areas than the magnetometer (see Figure 2). Areas traversed by the magnetometer and EM can be seen in Figure 3 which illustrates by red colored lines magnetometer routes and gold colors for the EM routes. Note that some areas within areas B through G were not accessible due to steeply sloped vegetated areas, dense reeds, marsh and a pond.

Access from the flat upper areas to the lower regions was only accessible by one walking path (see Photo 5). To reach the floodplain, two walking paths were available through the second plateau region in area G to the floodplain (see Photo 6).

Field Procedures

Gradient Magnetometer

The gradient magnetometer instrument is limited to detecting ferrous metals (materials containing iron). Depth detection limits are dependent on the size and mass of the ferrous metal, larger masses can be detected at greater depths. Lateral sensor detection extents are also dependent on the amount of mass present and may extend slightly beyond the actual source limits. The system operator was J. Ursic.

The magnetic survey was conducted using a Geometrics G-858G cesium vapor gradient magnetometer in a vertical gradient mode, one meter spacing. Sensor orientation had a configuration of rotation at 45 degrees with a tilt angle set to 0 degrees, per manufacture's guidance document. The instrument was hand carried with sensors offset from the operator by three feet forward to prevent any metal on the operator being detected. The GPS values were offset to match this distance.

Data were collected at a rate of about two readings per foot with lines offset approximately every 10 feet in feet in areas A, C and D. Lines in area G had varying offsets due to the prevalent vegetation and were traversed only in areas that allowed safe passage. Guidance to maintain this offset in areas A, C and D was provided by a Trimble AgGPS parallel swathing system augmented with an OmniSTAR differential correction option for sub meter accuracy for logging longitude and latitude (OmniStar Virtual Base Station [VBS] with L1 correction). The Trimble AgGPS was only used to provide longitude and latitude in area G since it was extremely difficult to walk grid lines.

Broadband Electromagnetics

A Geophex GEM-2 broadband multi frequency electromagnetic tool was used to measure changes in the subsurface matrix conductivity (quadrature phase) and also in-phase measurements (sensing ferrous and non-ferrous metals). The operator was Mike Browning, a contractor to USEPA.

Three frequencies were selected to investigate the sub-surface of the site. The highest frequency was limited to shallower depths and lowest frequency was limited to a deeper depths. The exact depths of investigation for each frequency cannot be precisely determined since there was no secondary

method to physically examine the subsurface conductivities which would help to estimate signal propagation speeds. A general estimate for the highest frequency (35,010 Hz) depth of exploration would be near surface to 5', the middle frequency (13,590 Hz) approximately 10' and the lowest frequency (3,930 Hz) about 15 feet. The EM tool collects all data from each frequency basically at the same time with positional data to provide X and Y locational data, therefore there will be matching traverse lines for all data collected.

The instrument was hand carried for the entire survey and in area G was randomly traversed in those areas safely accessible. Traverses in area A were guided by flagging set every ten feet at the ends of the property lines. Traverses in areas C and D were accessed by estimating offsets every 20'.

For latitude/longitude positioning using the GEM2 tool, the operator wore a plastic hardhat with a small Garmin GPS 18x unit, about the size of a hockey puck, Velcro'ed to the top of the hardhat. The Garmin unit was able to receive Coast Guard radio beacons allowing sub meter accuracies. However, beacon data must have been poor since there were many dropouts in the positioning data as seen in the broken red lines in Figure 2. Latitude and longitude values obtained through the Garmin unit were coupled to the GEM-2 instrument and data were automatically tagged to provide positional information. The Trimble parallel swath unit could not be used due to the amount of metal that would cause interference with this specific instrument.

Data Processing

Data for the GEM-2 and G-858G were all processed using Golden Software's Surfer 12 contouring program using the Kriging Method. Contour levels for the different instruments varied dependent on each method and data plots. Distances shown in Figures 3 thru 9 are referenced by latitude/longitude and by a bar scale which has been converted to feet by calculations from latitude and longitude values.

Gradient Magnetometer Data

Figure 3. Filled Contour Map Magnetometer Gradient Survey

This figure illustrates magnetic data representative of ferrous metal anomalies. Contour interval is 100 gammas per meter with lower contour intervals eliminated for clarity. Data values ranged from +8,420 to -5,500 gammas per meter. Note that some traverse lines indicate a circular pattern; these are locations of surface obstacles such as trees. A staging area was located at the southwest corner of the site and subsequently no data was collected in this area. Also of note are the first 15 traverse lines from the southern portion of Area A which were collected later in day on 12/10/14 when satellite configurations were poor and these traverse lines appear erratic.

Broadband Electromagnetic Data

An important note about broadband EM data must be considered for how data is interpreted. In order to match various frequencies to specific depths, an estimate is made by the operator as to how efficient propagation is within the soil matrix. An incorrect estimate will change the estimated depths. Although specific depth intervals are mentioned for each frequency, bear in

mind that this is the focused frequency interval, influences will also factor into the readings from depths just above and below the focused interval. Other complications occur when high concentrations of metal will interfere with all conductivity data.

Figure 4. Filled Contour Map Broadband EM In-Phase 35,010 Hz Survey

This illustration represents near surface ferrous and non-ferrous metal of the areas surveyed. Contour interval is 2000 parts per million and ranged from 0 to 24000 ppm, however some negative values were recorded, but have been blocked due to surface metal that caused interference.

Figure 5. Filled Contour Map Broadband EM In-Phase 13,590 Hz Survey

This illustration represents ferrous and non-ferrous metal estimated to be around 10 feet below ground surface of the areas surveyed. Contour interval is 2000 parts per million and ranged from 0 to 8000 ppm, however some negative values were recorded, but have been blocked due to surface metal that caused interference.

Figure 6. Filled Contour Map Broadband EM In-Phase 3,930 Hz Survey

This illustration represents ferrous and non-ferrous metal estimated to be around 15 feet below ground surface of the areas surveyed. Contour interval is 1000 parts per million and ranged from 0 to 11000 ppm, however some negative values were recorded, but have been blocked due to surface metal that caused interference.

Figure 7. Filled Contour Map Broadband EM Quadrature Phase 35,010 Hz Survey

This illustration represents changes in soil/fluid conductivities estimated to be near surface of the areas surveyed. Contour interval is 3000 parts per million and ranged from 0 to 15000 ppm, however some negative values were recorded, but have been blocked due to surface metal that caused interference.

Figure 8. Filled Contour Map Broadband EM Quadrature Phase 13,590 Hz Survey

This illustration represents changes in soil/fluid conductivities estimated to be around 10 feet below ground surface of the area surveyed. Contour interval is 2000 parts per million and ranged from 0 to 8000 ppm, however some negative values were recorded, but have been blocked due to surface metal that caused interference.

Figure 9. Filled Contour Map Broadband EM Quadrature Phase 3,930 Hz Survey

This illustration represents changes in soil/fluid conductivities estimated to be around 15 feet below ground surface of the area surveyed. Contour interval is 1000 parts per million and ranged from 0 to 6000 ppm, however some negative values were recorded, but have been blocked due to surface metal that caused interference.

Conclusions

Figure 3.

Magnetic gradient data collected by the River and on the first plateau, shows significant masses of metal toward the northwest portion of the site; however it is unknown how the surface metal

in the area is limiting what can be detected below ground. The remaining areas on the first plateau also show high concentrations of mass which is much less than those anomalies seen in Areas A, C and D. Anomalies in areas A, C and D do not appear to have significant concentrations of metal, but four linear trends can be seen. Two linear trends are seen along the northwestern and southeastern property lines of Area A; a third linear anomaly trending east-west near latitude 42.6327 with another paralleling along altitude 42.6329. It is unknown if the two previously mentioned anomalies are buried pipes, cabling or general refuse that was piled in a linear fashion and covered. No obvious anomalies are seen in the floodplain. Since the areas between the two plateaus were inaccessible, it cannot be established if anomalies exist in this area, however trash was scattered intermittently in these areas.

Figure 4

EM in-phase data for near surface metal anomalies exist on the entire first plateau (see 4A). Additional anomalies can be seen at the central southwestern most edge of Area A (see 4B), minor anomalies continue to the northeast (see 4C). No EM data are comparable to the magnetic anomalies seen at the northwestern and southeastern property lines, nor linear data along latitudes 42.6237 and 42.6329.

Figure 5.

EM in-phase data for surface metal estimated at 10 feet below ground surface still shows significant anomalous areas on the first plateau (see 5A) and along the central southwestern boarder of Area A (see 5B) and to a lesser extent to the northeast (see 5C). There appears to be some evidence of anomalies trending east – west near latitudes 42.6327 and 42.6329 (see 5D).

Figure 6.

EM in-phase data for surface metal estimated at 15 feet below ground surface and still shows anomalous areas on the first plateau although not as contiguous. There appears to be some evidence of anomalies trending east – west near latitudes 42.6327 (see 6A) but not near latitude 42.6329. An anomaly near the northwestern property boundary, near one of the magnetic anomalies is now apparent which may indicate the magnetic anomalies in this area are deep. Anomalies are visible, but weaker on the central southwestern edge of the survey area (see 6C).

Figure 7.

EM quadrature phase data provides information on electrical conductivities within the ground and can be influenced by buried materials, highly conductive/resistive contaminate plumes, or non-contaminate plumes such as dissolved salts from winter deicing applications. Data values in this Figure were obtained at a frequency of 35,010 Hz which should be representative of near surface conditions. Lower data values in this Figure seem to match general anomalous areas seen in figures 3 thru 6 and probably are past fill areas. The lower plateau (see identifier 7A on Figure 7) has both low and high conductivity readings due to the fill. The flood plain elevations just below the plateau is also showing higher conductivities (see 7B) but returns to background as one moves closer to the River. The highest conductivity readings are seen near the south and central survey limits on the southwestern edge of Area A (see 7C, 7D). The source of the southwestern-most anomaly is unknown, but the central anomaly, at least part of it, seems to follow a dirt road. If gravel or other type of road bed was laid down, this may be the source; however it would not explain the anomalous area near 42.63238N and -87.04955W. It may be

worthwhile to determine if these roads are salted in the winter since the gradient from the pavement seems to be angled down to the river. Until this area is sampled, the cause of this anomaly is undetermined.

Figure 8.

EM quadrature phase data for the 13,590 Hz data are estimated to be detecting areas around 10 feet below ground surface, when compared to Figure 7 there are some anomaly changes. The anomalies on the floodplain are, for the most part, non-existent (see 8A); however there remains anomalies, both high and low values, on the first plateau of Area G (see 8B) indicating deeper extents. As for the anomalous extents in Areas A, C and D, compared to Figure 7, there seems to be less anomalous areas in the northern section of Area A (see 8C) indicating there is less fill at this interval. Anomalies still exist on the southwestern edges of Area A (see 8D) and near the dirt road, but the anomaly on the dirt road is not as high from the same location in Figure 7 (see 8E).

Figure 9.

EM quadrature phase data for the 3,930 Hz data are estimated to be detecting areas around 15 feet below ground surface, when compared to Figure 8 the following items are noted: low and high anomaly values still are present on the second plateau (see 9A), there is a possibility that metal above this detection elevation may be interfering with this anomaly. Extents of anomalies in Areas A, C and D (see (B)) are somewhat less in size than seen in Figure 8, indicating a smaller waste area with depth. The anomalies on the southwestern portions of Area A (see 9C) remain present and possibly may be affected by higher conductivities above this zone.

DISCLAIMERS & WARNINGS:

Geophysical instruments used at this site were not configured to locate all utility lines, although they could be influenced by such lines under certain conditions. It is critical *not to use this data* for utility line location since methods applied were only directed towards larger sub-surface targets, other than utility lines.

It is strongly recommended that before any intrusive sampling, test pits, or other excavation methods are applied at the site, that *all* utility services be contacted to verify that none of the anomalies are the result of or near any buried utilities. Note that not all buried utilities and pipelines are members of local utility location services.

If any excavations are attempted near anomalies mentioned in this report, it is recommended that initial ground breaking be conducted outside the anomalous area and slowly moved towards the anomaly. This procedure will reduce the probability of damaging, puncturing, or disturbing the unknown source of the anomaly.

Note that data were collected on intervals that, in general, did not overlap so the possibility exists that not all areas could be evaluated between each line. Such a distinction has to be evaluated to consider the size of the suspected target and the amount of time available for the survey.

It is extremely difficult to discriminate specific sources of targets (metal scrap, etc.) based on geophysical responses since no one example can adequately describe each possible configuration. In addition, any distortions or deteriorations of buried objects will also affect anomaly signatures. (Continued on Next Page)

Disclosure of product names in this report is not an implied or direct recommendation of the equipment used for this survey. It is only provided for its scientific value related to a specific method or tool used.

Attachments: Figures 1 thru 9
Appendix A: Weather Data
Photographs (digital)

Appendix A

Weather Data

History for Mt. Clemens, MI

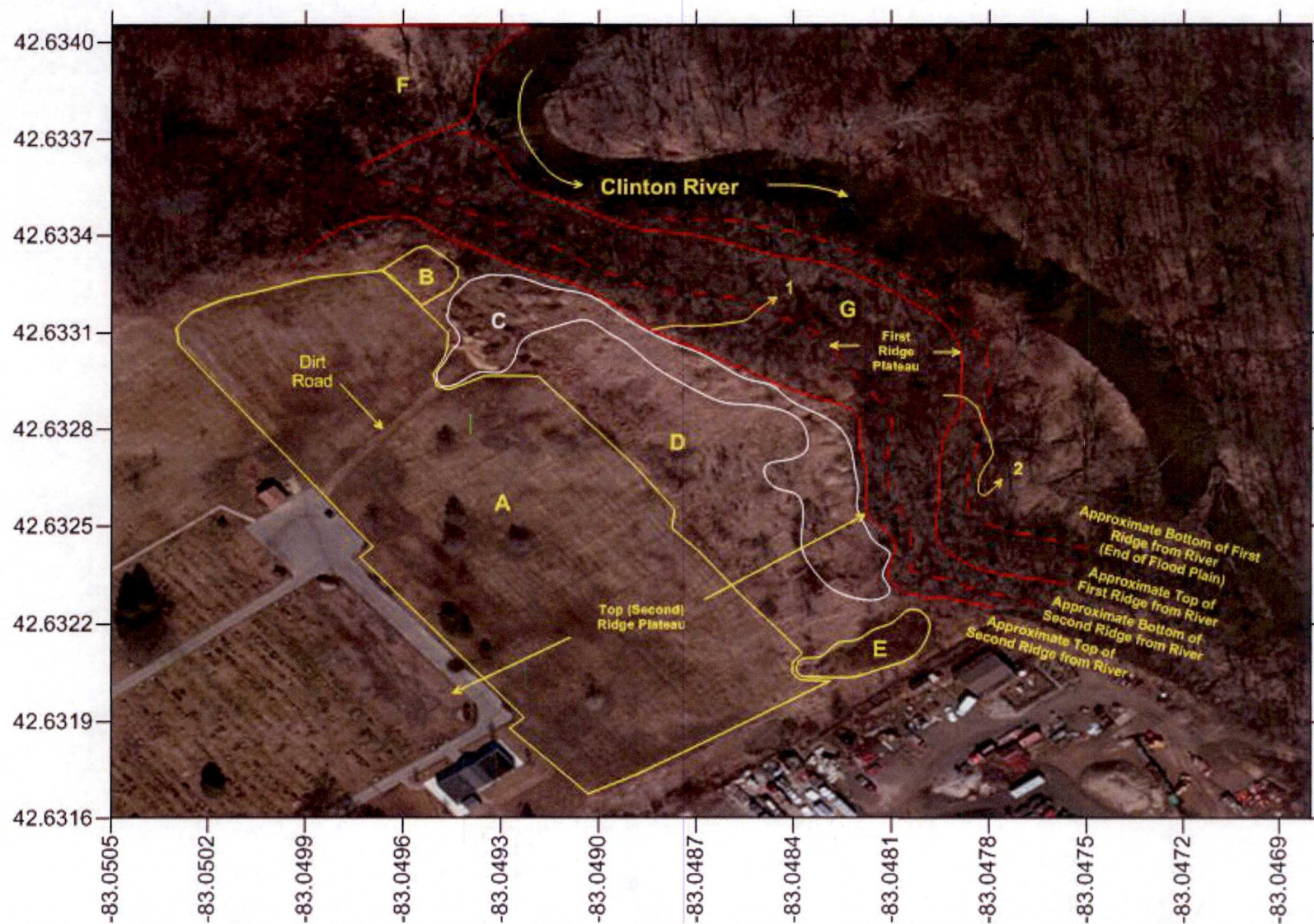
Wednesday, December 10, 2014 — [View Current Conditions](#)

Daily Summary				
Previous Day	December	10	2014	View
Next Day				
Daily	Weekly	Monthly	Yearly	Custom
Temperature:		Actual:	Average:	Record:
Mean Temperature	28 °F	-	64 °F (1971)	
Max Temperature	33 °F	36 °F	3 °F (1950)	
Min Temperature	23 °F	24 °F		
Degree Days:				
Heating Degree Days	37			
Moisture:				
Dew Point	26 °F			
Average Humidity	90			
Maximum Humidity	100			
Minimum Humidity	80			
Precipitation:				
Precipitation	0.00 in			-0
Sea Level Pressure:				
Sea Level Pressure	30.22 in			
Wind:				
Wind Speed	16 mph (NNW)			
Max Wind Speed	23 mph			
Max Gust Speed	30 mph			
Visibility	11 miles			
Events	Rain			
Averages and records for this station are not official NWS values.				
T = Trace of Precipitation, MM = Missing Value			Source: NWS Daily Summary	

History for Mt. Clemens, MI

Thursday, December 11, 2014 — [View Current Conditions](#)

Daily Summary				
Previous Day	December	11	2014	View
Next Day				
Daily	Weekly	Monthly	Yearly	Custom
Temperature:		Actual:	Average:	Record:
Mean Temperature	29 °F	-	59 °F (1979)	
Max Temperature	39 °F	33 °F	1 °F (1977)	
Min Temperature	19 °F	24 °F		
Degree Days:				
Heating Degree Days	36			
Moisture:				
Dew Point	14 °F			
Average Humidity	57			
Maximum Humidity	85			
Minimum Humidity	24			
Precipitation:				
Precipitation	0.00 in			-0
Sea Level Pressure:				
Sea Level Pressure	30.06 in			
Wind:				
Wind Speed	10 mph (WNW)			
Max Wind Speed	17 mph			
Max Gust Speed	23 mph			
Visibility	11 miles			
Events				
Averages and records for this station are not official NWS values.				
T = Trace of Precipitation, MM = Missing Value			Source: NWS Daily Summary	



St. Lawrence Cemetery Site - Utica, Michigan
Index Map - Surface Features for Geophysical Survey
December 10 -11, 2014



Scale is Relative to Longitudes and Latitudes Indicated

Color Image: Do Not Photocopy in Black & White

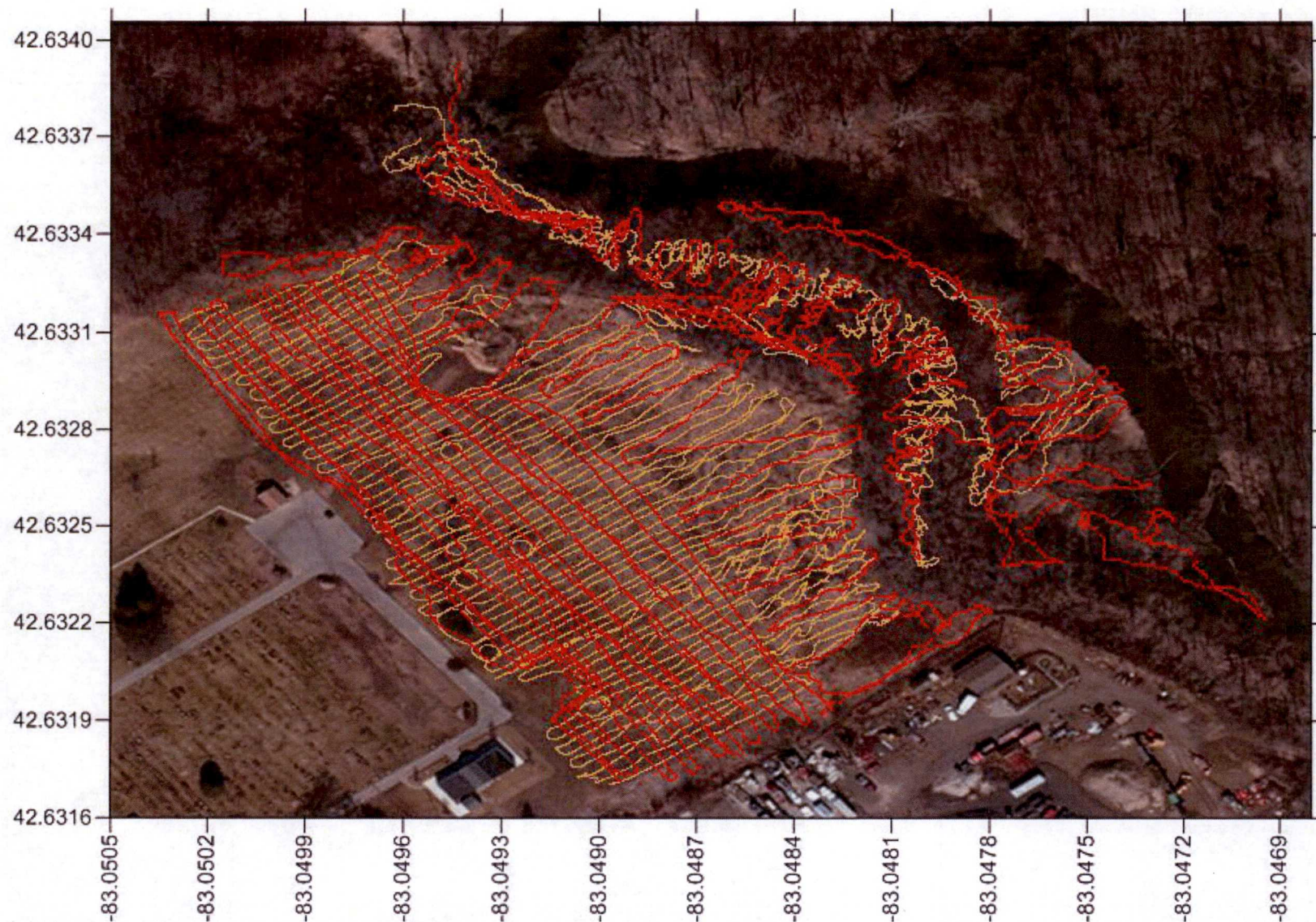
Index to Letter & Number References:

- | | |
|-----------------------------|--|
| A. Flat Grassy Area | 1. Path to 2 nd Ridge Plateau |
| B. Reeds > 6' Tall | 2. Path to Flood Plain |
| C. Mounded Areas | |
| D. Brush, Tall Weeds | |
| E. Reeds > 6' Tall, Water | |
| F. Marsh Area | |
| G. Slopes/Ridges/Floodplain | |

Figure 1

Datum: NAD83





St. Lawrence Cemetery Site; Utica, Michigan
 Index Map - Composite of Geophysical Survey Traverse Locations
 December 10-11, 2014



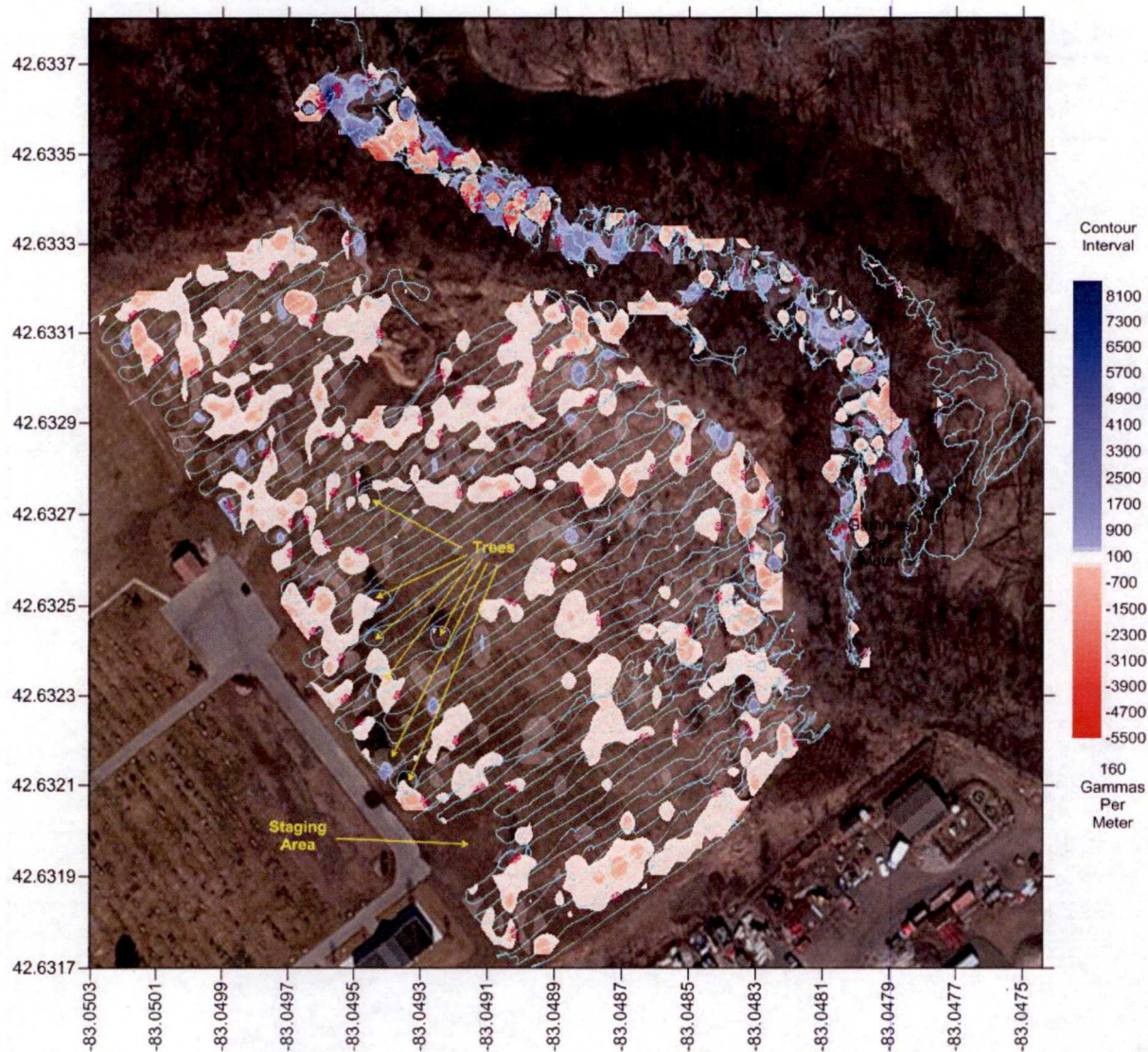
Gold Color Lines = GEM-2 Electromagnetic Traverses - Red Color Lines = Gradient Magnetometer Traverses

Scale Relative to Latitude & Longitude Shown

Figure 2

Color Image: Do Not Photocopy in Black & White





St. Lawrence Cemetery Site
5961 Auburn Road
Shelby Township; Macomb County
Utica, MI

Gradient Cesium Magnetometer Data
Geometrics G858-G

Contour Interval = 160 Gammas Per Meter

Survey Date: December 10-11, 2014

Red Filled Polygons = Negative Values
Blue Filled Polygons = Positive Values
Blue Dots = Data Collection Traverses
1 Dot Per Data Point

GPS Acquisition = Trimble AgGPS Model 33302-1
Datum = NAD83

Color Image
Do Not Photocopy in Black and White

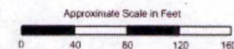
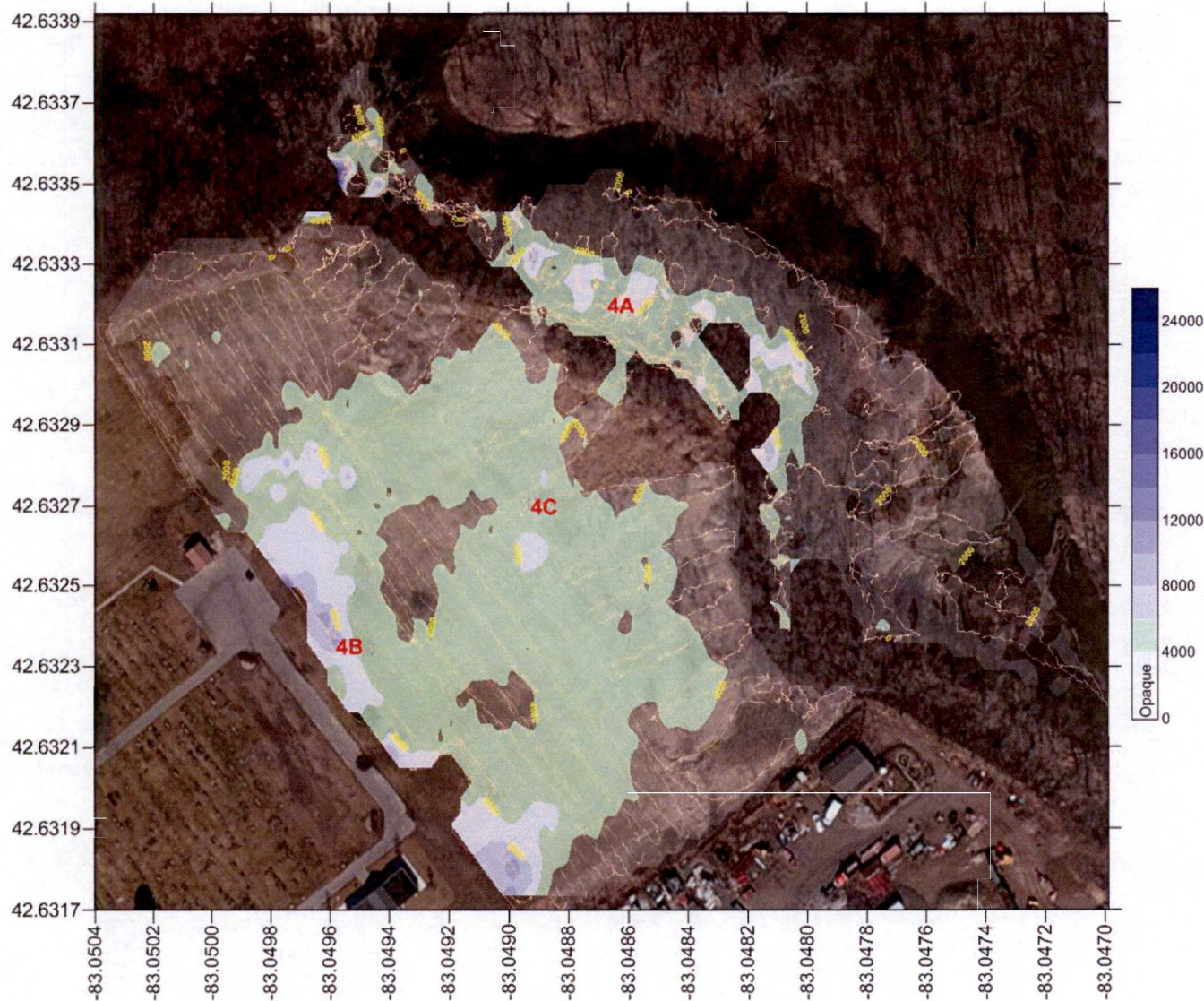


Figure 3



St. Lawrence Cemetery Site
5961 Auburn Road
Shelby Township; Macomb County
Utica, MI

Broadband Electromagnetic Filled Contour Data
35010 Hz In-Phase
Geophex GEM-2

Contour Interval = 2000 Parts Per Million

Survey Date: December 10-11, 2014

Blue Filled Polygons = Positive Values
Tan Dots = Data Collection Traverses
1 Dot Per Data Point

GPS Acquisition = Garmin GPS 18x
Coast Guard Beacons Used for Sub-Meter Accuracy
Datum = NAD83

Color Image
Do Not Photocopy in Black and White

Red Alpha-Numeric Identifiers are
Locations Referenced in Report

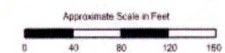
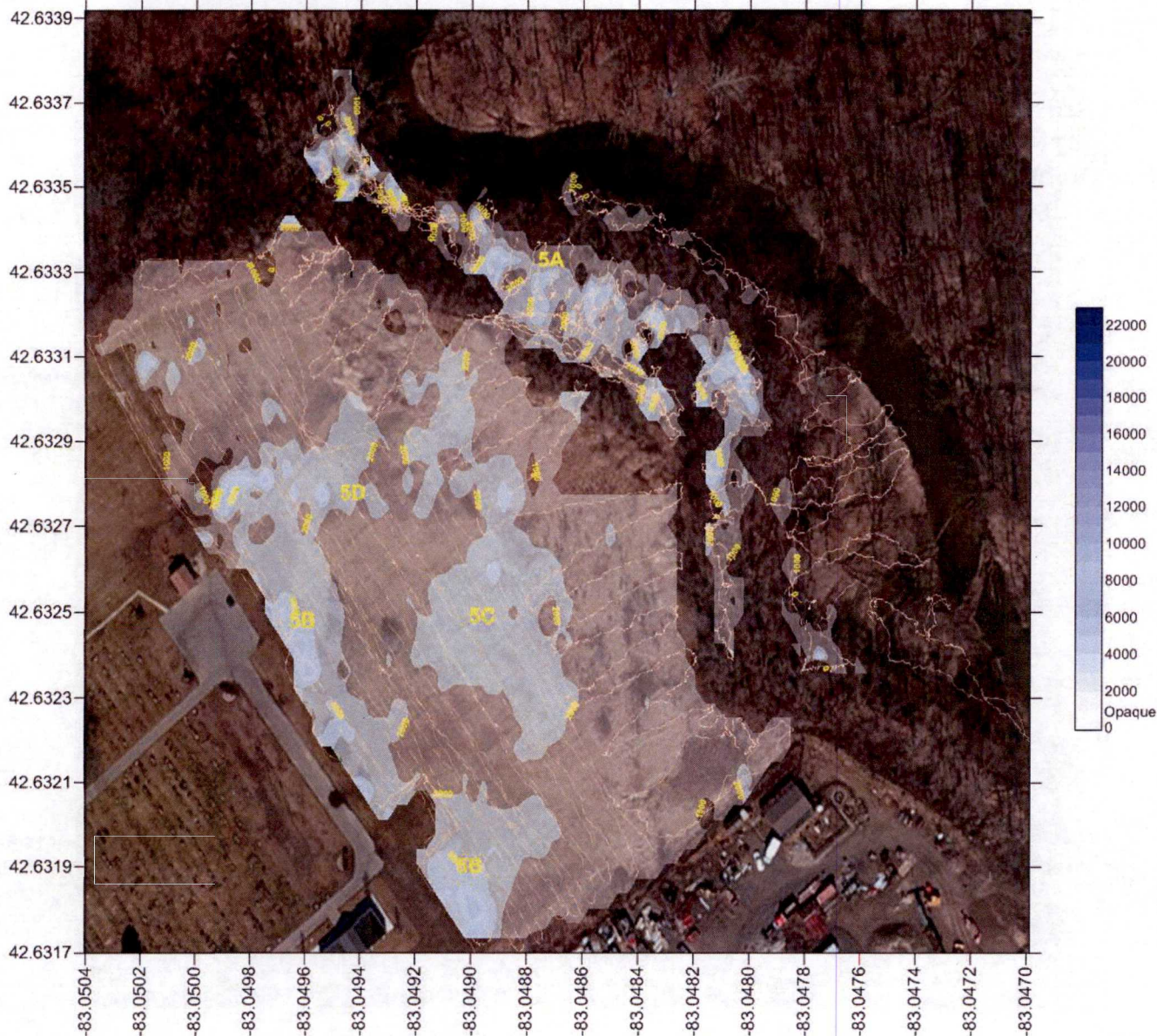


Figure 4



St. Lawrence Cemetery Site
5961 Auburn Road
Shelby Township; Macomb County
Utica, MI

Broadband Electromagnetic Filled Contour Data
13590 Hz In-Phase
Geophex GEM-2

Contour Interval = 2000 Parts Per Million

Survey Date: December 10-11, 2014

Blue Filled Polygons = Positive Values
Tan Dots = Data Collection Traverses
1 Dot Per Data Point

GPS Acquisition = Garmin GPS 18x
Coast Guard Beacons Used for Sub-Meter Accuracy
Datum = NAD83

Color Image
Do Not Photocopy in Black and White

Yellow Alpha-Numeric Identifiers are
Locations Referenced in Report

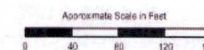
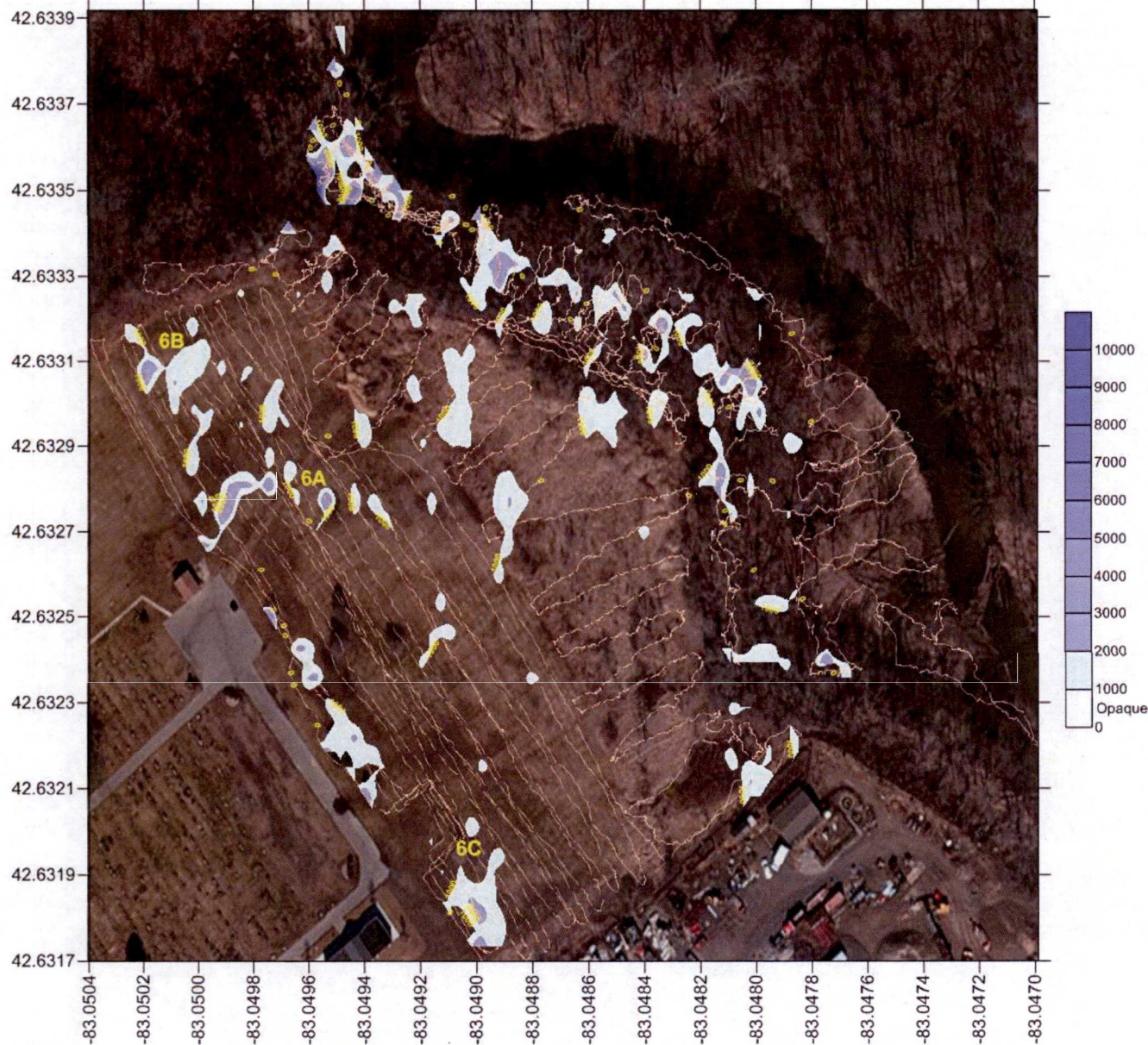


Figure 5



St. Lawrence Cemetery Site
5961 Auburn Road
Shelby Township; Macomb County
Utica, MI

Broadband Electromagnetic Filled Contour Data
3930 Hz In-Phase
Geophex GEM-2

Contour Interval = 1000 Parts Per Million

Survey Date: December 10-11, 2014

Blue Filled Polygons = Positive Values
Tan Dots = Data Collection Traverses
1 Dot Per Data Point

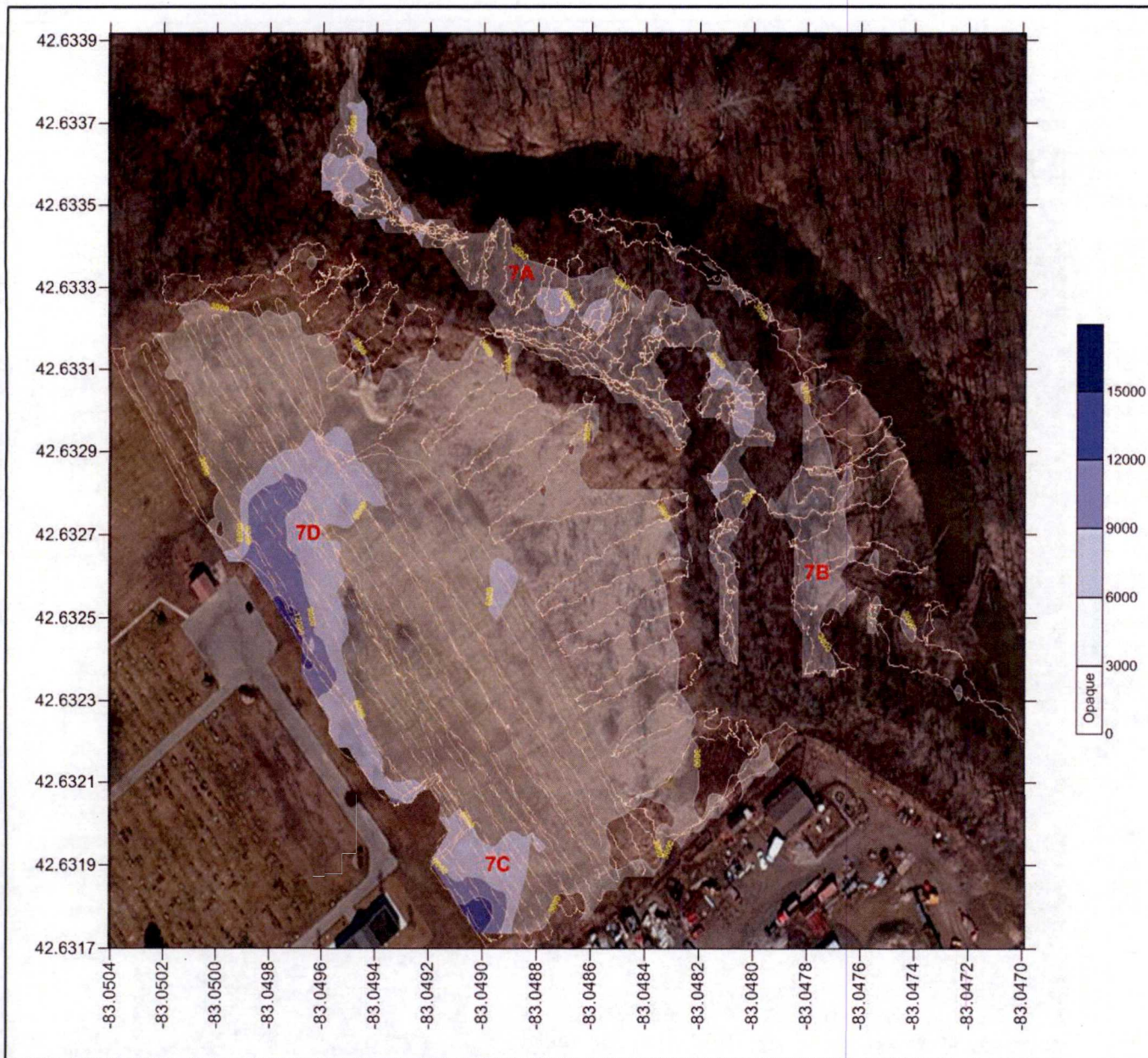
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Coast Guard Beacons Used for Sub-Meter Accuracy
Datum = NAD83

Color Image
Do Not Photocopy in Black and White

Yellow Alpha-Numeric Identifiers are
Locations Referenced in Report



Figure 6



St. Lawrence Cemetery Site
5961 Auburn Road
Shelby Township; Macomb County
Utica, MI

Broadband Electromagnetic Filled Contour Data
35010 Hz Quadrature Phase
Geophex GEM-2

Contour Interval = 3000 Parts Per Million

Survey Date: December 10-11, 2014

Blue Filled Polygons = Positive Values
Tan Dots = Data Collection Traverses
1 Dot Per Data Point

GPS Acquisition = Garmin GPS 18x
Coast Guard Beacons Used for Sub-Meter Accuracy
Datum = NAD83

Color Image
Do Not Photocopy in Black and White

Red Alpha-Numeric Identifiers are
Locations Referenced in Report

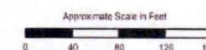
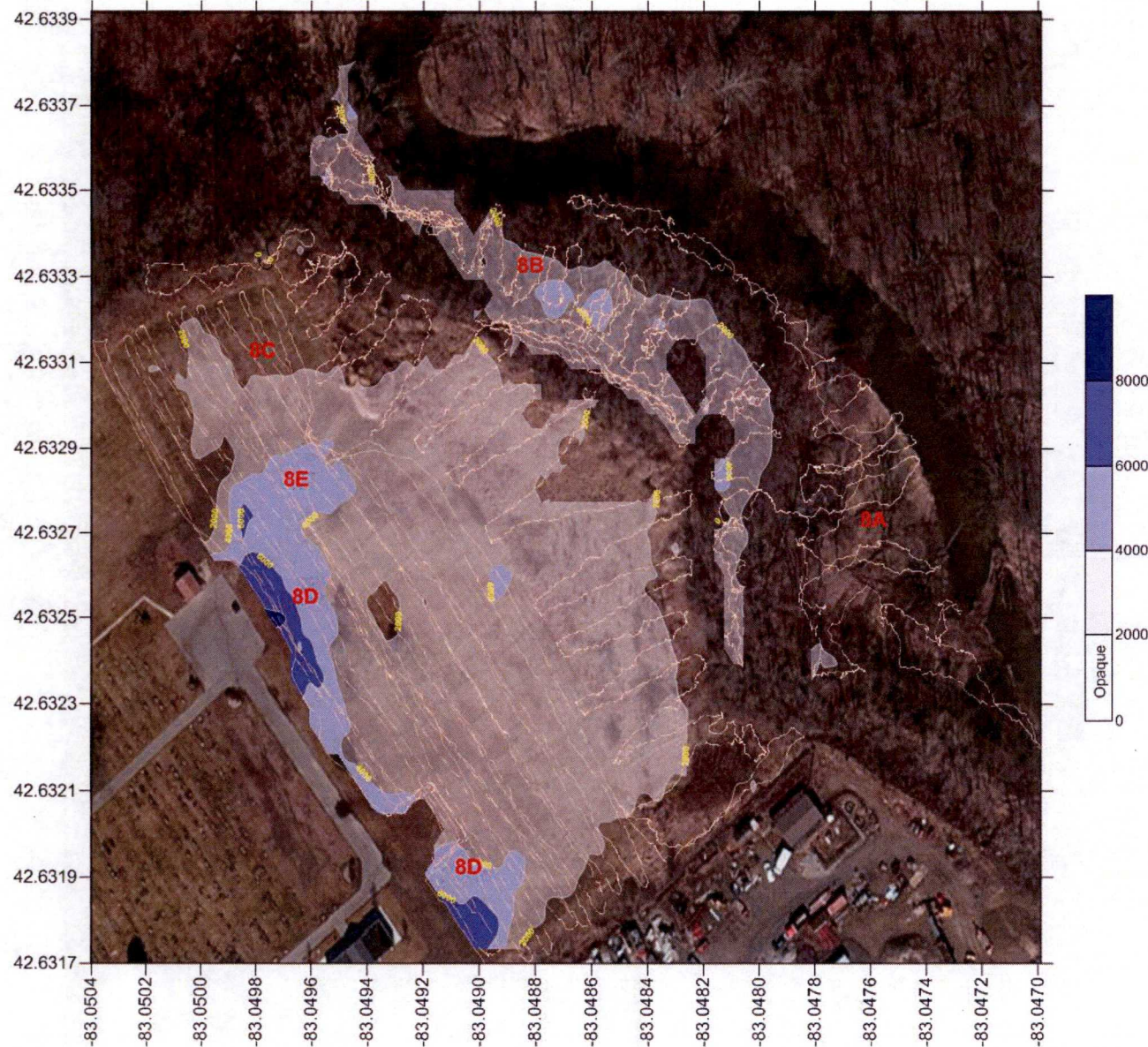


Figure 7



St. Lawrence Cemetery Site
5961 Auburn Road
Shelby Township; Macomb County
Utica, MI

Broadband Electromagnetic Filled Contour Data
13590 Hz Quadrature Phase
Geophex GEM-2

Contour Interval = 2000 Parts Per Million

Survey Date: December 10-11, 2014

Blue Filled Polygons = Positive Values
Tan Dots = Data Collection Traverses
1 Dot Per Data Point

GPS Acquisition = Garmin GPS 18x
Coast Guard Beacons Used for Sub-Meter Accuracy
Datum = NAD83

Color Image
Do Not Photocopy in Black and White

Red Alpha-Numeric Identifiers are
Locations Referenced in Report

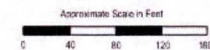
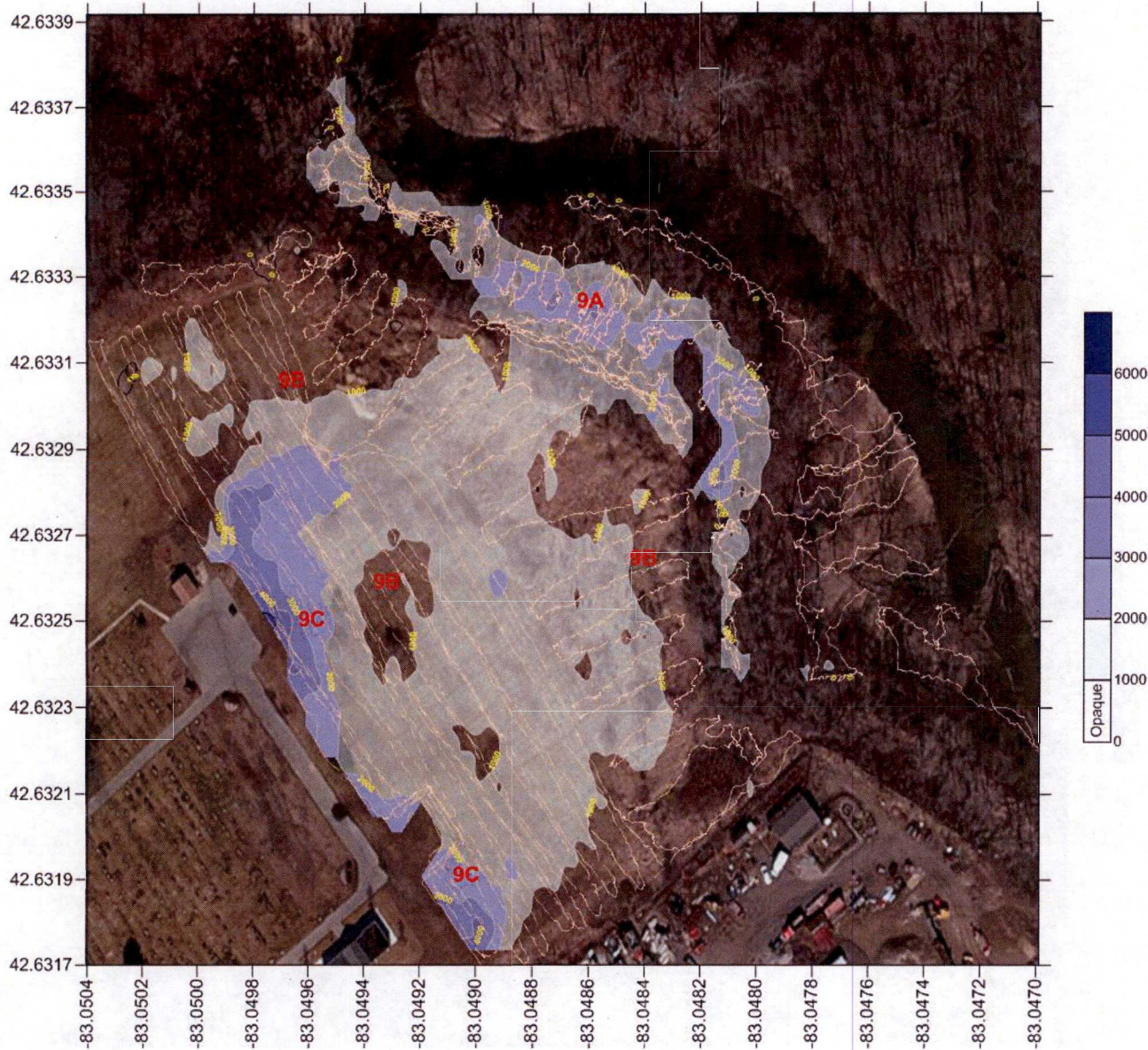


Figure 8



St. Lawrence Cemetery Site
5961 Auburn Road
Shelby Township; Macomb County
Utica, MI

Broadband Electromagnetic Filled Contour Data
3930 Hz Quadrature Phase
Geopex GEM-2

Contour Interval = 1000 Parts Per Million

Survey Date: December 10-11, 2014

Blue Filled Polygons = Positive Values
Tan Dots = Data Collection Traverses
1 Dot Per Data Point

GPS Acquisition = Garmin GPS 18x
Coast Guard Beacons Used for Sub-Meter Accuracy
Datum = NAD83

Color Image
Do Not Photocopy in Black and White

Red Alpha-Numeric Identifiers are
Locations Referenced in Report

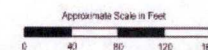


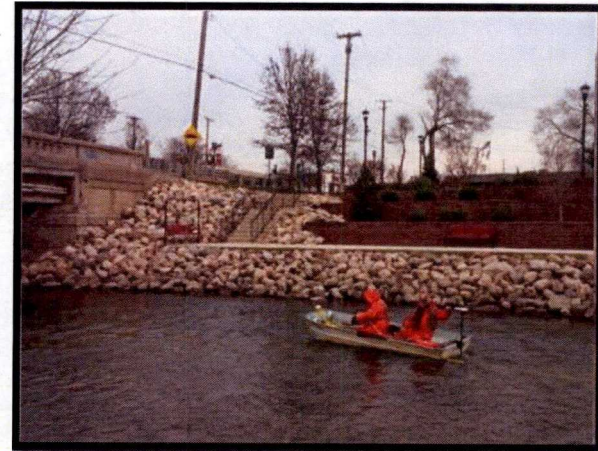
Figure 9

Site Photo Log

St. Lawrence Cemetery Site



1. Clinton River Portage @ Auburn Road - Utica, MI



2. Clinton River - Attempted Move Upstream



3. GEM Operator During Survey DSCN0207



4. Mag Operator Paused During Survey DSCN0206

St. Lawrence Cemetery Site



5. Path (left) from 1st Plateau to Upper Elevation



6 . Path (left) from 1st Plateau to Floodplain



7. Metal Scrap, 1st Plateau, North End



8. Vehicle Frame, 1st Plateau, North End

St. Lawrence Cemetery Site



9. Top of Buried Car, 1st Plateau, North End



10. Metal Box, 1st Plateau, North End



11. Clay Pipe, Washing Machine, Other Metal Scrap, 1st Plateau, North End DSCN0219



12. Tires, Metal Scrap, 1st Plateau, North End DSCN0220

St. Lawrence Cemetery Site



13. Trash Exposed in Bank Cut, 1st Plateau, North End R0010992



14. Tires & Concrete, 1st Plateau, North End R0010991



15. Example of Impassable Vegetation & Metal Drum
Bottom 2nd Plateau, North End R0010989



16. Metal Scrap & Concrete, 1st Plateau, North End R0010985

St. Lawrence Cemetery Site



17. Looking NW at 1st Plateau Trail, River Right, Upslope to 2nd Plateau Left R0010978



18. Metal Scrap & Wire Rope at Bottom of 2nd Plateau, North End R0010988



19. Concrete & Cut Wood, Bottom 1st Plateau, North End R0010981



20. Concrete Drain Pipes, Bottom of 2nd Plateau, S. End DSCN0218

St. Lawrence Cemetery Site



21. Metal Drums, 1st Plateau, North End DSCN0240



22. Looking E. 1st Plateau, 2nd Plateau Right, River Left
DSCN0244



23. Looking S. 1st Plateau Path, Top 2nd Plateau Right,
Floodplain Left DSCN0245



24. Non-Metallic Pipe Near 2nd Plateau Ridge, South Side

St. Lawrence Cemetery Site



25. Looking S. at Floodplain, River Left DSCN0247



26. Gully from Top 2nd Plateau to 1st Plateau, S. End



27. Looking S. from 1st Plateau at Floodplain



28. Hummock & Reeds Areas C & B, N. Side

St. Lawrence Cemetery Site



29. Hummocky Area, Area C



30. N. Corner Area A



31. Looking SW, Mid -Section Area A



32. Looking SW Along SW Edge of Survey Area A

St. Lawrence Cemetery Site



33. Looking S. at S. End Area C



34. Looking W. from Mid-Section Area D



35. Looking NW from Mid-Section Area A



36. Top of Ridge by Central Path, Area C

St. Lawrence Cemetery Site



37. Looking SE from Mid-Portion Area D



38. Area E with Reeds & Water



39. Looking NW from S. End of Area A



40. Hummocks in Area C

St. Lawrence Cemetery Site



41 . Looking SE Near from SW Edge of Area A, Mid-Way Point



42. Reeds in Area B



43. Pile of Leafs Area D, Mid-Portion



44. Looking SW from S. End of Area E

St. Lawrence Cemetery Site



45. Looking Down from 2nd Plateau Ridge at S. End Area C



46. Area E



47. Looking at SW Corner of Area A



48. Looking SW Near Cemetery Shed & Dirt Road

St. Lawrence Cemetery Site



49. Looking NW at Staging Area, Area A



50. Boundary Between Areas A & B



51. Looking SE at Recent Dirt Mounds, Area A



52. Looking NE from Cemetery Shed at Dirt Piles, Note Scared Ground Surface in Foreground